

Course Description

This web-blended course is intended to help prepare IT-Adventures Advisors & Mentors for student experiences at IT-Olympics and to better understand IT concepts * software and hardware, social implications, and careers.

IT-Adventures is an innovative program that engages Iowa high school students in exploration and experimentation with information technology (IT) through material delivery, competitive events and service learning projects. The program is dedicated to increasing interest and awareness of information technology among high school students across the state and stems the downward curve of students selecting IT as a career.

The foundation of the program is the formation of IT-Clubs in high schools across Iowa. The clubs can be focused on one or all content areas depending upon the interest of the students and advisors. Content areas for 2009-10 are cyber defense, game design and robotics.

The capstone event for the students participating in the club is participation in the IT-Olympics where they have an opportunity to showcase the knowledge they have gained over the past year.

Learning Goals and Objectives

1. Participants will network and share ideas/materials relating to club facilitation and create units of practice based on the research and best practices presented through provided materials and club involvement.
2. Participants will examine challenges and opportunities for IT education.
3. Participants will reflect on specific ethics questions related to the Internet & Computers.
4. Participants will expand professional vision of the future by examining societal IT trends.

Syllabus

This course will include blended delivery - including both a face-to-face and online instruction.

Face-to-Face (IT-Olympics -- Ames, IA):

1. Electrical, Computer, & Software Engineering Interactive Design Presentation (4/23 -1-2pm)
2. Observe competitions and student engagement in and application of IT concepts. (asynchronous) (4/23 - 2pm-3pm)
3. Roundtable Discussion/Presentation of Experience (4/23 -3-5pm)
4. Observe competitions and student engagement in and application of IT concepts. (asynchronous) (4/24 - 8pm-4pm)
5. Interview a minimum of three educational or corporate representatives regarding postsecondary career opportunities in IT. (asynchronous) (4/24 * 8am-12pm))

Online will be facilitated through <http://webct.dmacc.edu>; Login to this site is required and will be sent from DMACC.

1) Discuss materials pertaining to specific student group's experiences and interests:

- Dann, Cooper, and Pausch. Learning to Program with Alice. Prentice Hall, 2005.
- Ferrari, Ferrari, and Astolfo. Building Robots with Lego Mindstorms NXT. Syngress, 2007
- Rursch, et al. Networking Concepts/Cyber Defense Lecture notes. 2007-08.

2) Survey topics relating to secondary student perceptions of Cyber Safety, Ethics, & Careers.

- Do students understand potential dangers to digital misuse?
- Do students respect intellectual property protections in a cyber environment?
- Do activities such as IT-Adventures increase career awareness and numbers?
- Are teachers & students aware of post-secondary educational opportunities?

3) Discuss (asynchronously) the following topics relating to IT-Adventures:

- Club membership/recruitment/diversity initiatives
- Mentor involvement
- Community Service experiences
- Planning/Project Management
- Areas for improvement
- Future events/topical competitions

Course Requirements and Participant Evaluation

Participants must serve as a registered IT-Adventures advisor or mentor (activity should be documented)

Active participation in all online components and discussions topics

All assignments completed and submitted

100% Attendance for all IT-Olympics sessions including competitive venues, face-to-face teacher workshop, and Interactive Design Presentation.

Participant Evaluation:

A/Pass Grade - The participant will hand in:

A summary of interviews of three (minimum) educational or corporate representatives regarding postsecondary career opportunities in IT.

A reflection presentation that adequately discusses all of the following topics:

1. Effectiveness of community service project to community and club membership, ideas for future service
2. Problems with and possible improvement to IT education in secondary settings
3. The role of cyber-ethics in your school curriculum

Completion of a self-assessment as an advisor/mentor

B/Pass Grade - The participant will hand in:

A summary of interviews of three (minimum) educational or corporate representatives regarding postsecondary career opportunities in IT.

A reflection presentation that adequately discusses at least one but not all of the topics listed in the A grade section.

Completion of self-assessment as an advisor/mentor

F/Fail - The participant did not meet the minimum criteria for a "B" grade

Research that Supports Activity

The following resources are utilized to bolster student understanding of the technology components of the IT-Adventures club and IT-Olympics contest.

Dann, Cooper, and Pausch. Learning to Program with Alice. Prentice Hall, 2005.

Ferrari, Ferrari, and Astolfo. Building Robots with Lego Mindstorms NXT. Syngress, 2007

Rursch, et al. Networking Concepts/Cyber Defense Lecture notes. 2007-09.

Additionally, selected discussion points regarding cyber ethics will be drawn from the following text: Schwartau, Winn. Internet & Computer Ethics for Kids:(and Parents & Teachers Who Haven't Got a Clue). Interpact Press 2001.